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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/810,701	03/29/2004	Takeo Ohsaka	Q80771	9046

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2100 PENNSYLVANIA AVE. NW
WASHINGTON, DC 20037-3213

EXAMINER	
JOYNER, KEVIN	

ART UNIT	PAPER NUMBER
1797	

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10/31/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/810,701	OHSAKA ET AL.	
	Examiner	Art Unit	
	Kevin C. Joyner	1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 September 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2 and 5* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 2, and 5* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on September 28, 2007 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 2 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Merk et al. (U.S. Patent No. 6,387,238) in view of Tennakoon et al. (U.S. Patent No. 6,949,178).

Regarding claim 1, Merk discloses a method for the sterilizing/cleaning of an object with an aqueous solution of a peroxide (column 12, lines 49-53), which comprises:

Providing an electrolytic cell (10) comprising an anode chamber (12) including an anode (16), a cathode chamber (14) including a gas cathode (18), a catholyte inlet and a catholyte outlet, a membrane (20) separating the anode and cathode chambers, and an acid catalyst arranged between the gas cathode and the membrane (column 4, lines 41-64; column 5, lines 24-34; column 8, lines 64-66),

Supplying an oxygen-containing gas to the cathode chamber (column 5, lines 24-28), supplying an aqueous electrolyte containing acetic acid and/or an acetate to the cathode chamber (column 5, lines 42-45; column 6, lines 11-20), and applying a voltage across the anode and the cathode to thereby electrolytically synthesizing a peracetic acid-containing aqueous solution (column 5, lines 13-21), and

Contacting the object with the peracetic acid-containing aqueous solution (column 11, lines 54-60). More specifically, the reference discloses that the acid catalyst (referenced as peracetic acid precursor) is supplied in solid or liquid form (column 8, lines 64-65). Since the liquid form is supplied between the gas cathode and the membrane as shown in Figure 1, then the solid form is known to be supplied in that area as well. Furthermore, the peracetic acid precursor is added before the formation of the peroxide species (column 8, lines 54-55). The peroxide species is formed by the voltage sent to the cathode and anode that simultaneously reacts with the peracetic acid precursor to form the peracetic acid solution, and wherein the peracetic acid solution is formed inside the cathode chamber and supplied directly from the chamber to a decontamination system via

a fluid line (89) as disclosed in column 11, lines 56-59. Thus, a voltage is applied across the anode and the cathode to electrolytically synthesize a peracetic acid-containing aqueous solution.

Merk does not appear to disclose a particulate solid acid catalyst comprising a polymer resin arranged between the gas cathode and the membrane. Tennakoon discloses a method for the electrolytic synthesis of peracetic acid which comprises electrolytically synthesizing peracetic acid from the acetic acid and/or acetate and an oxygen containing gas as starting materials in the presence of a solid acid catalyst in column 12, lines 19-47. Tennakoon continues to disclose that the solid acid catalyst (132) is comprised of a polymer resin (column 4, lines 42-47), and is located between a gas cathode (130) and a membrane (120) as disclosed in Figure 1 and column 10, lines 45-55. As shown in Figure 1, the cathode (130) is comprised of a gas diffusion layer and the solid acid catalyst layer (132) that is between the diffusion layer (134) and the membrane (120). Since the catalyst layer is located between the membrane and at least a portion of the cathode, then it is located between the two objects. Tennakoon also discloses that the solid acid catalyst is provided in the electrochemical cell in order to eliminate the need for corrosive acids as

Concerning claim 2, Merk also discloses that the aqueous solution of a peroxide used for the sterilizing/cleaning of the object is reused for electrolytic synthesis (column 12, lines 44-52).

Regarding claim 5, Merk discloses a method for the electrolytic synthesis of peracetic acid (column 3, lines 29-40) which comprises electrolytically

synthesizing peracetic acid from an acid and an oxygen-containing gas as starting materials in the presence of a solid acid catalyst, said step of electrolytically synthesizing peracetic acid comprises:

Providing an electrolytic cell (10) comprising an anode chamber (12) including an anode (16), a cathode chamber (14) including a gas cathode (18), a catholyte inlet and a catholyte outlet, a membrane (20) separating the anode and cathode chambers, and a particulate solid acid catalyst arranged between the gas cathode and the membrane (column 4, lines 41-64; column 5, lines 24-34; column 8, lines 64-66),

Supplying an oxygen-containing gas to the cathode chamber (column 5, lines 24-28), supplying an aqueous electrolyte containing acetic acid and/or an acetate to the cathode chamber (column 5, lines 42-45; column 6, lines 11-20), and applying a voltage across the anode and the cathode to thereby electrolytically synthesizing a peracetic acid-containing aqueous solution (column 5, lines 13-21), and

Contacting the object with the peracetic acid-containing aqueous solution (column 11, lines 54-60). More specifically, the reference discloses that the acid catalyst (referenced as peracetic acid precursor) is supplied in solid or liquid form (column 8, lines 64-65). Since the liquid form is supplied between the gas cathode and the membrane as shown in Figure 1, then the solid form is known to be supplied in that area as well. Furthermore, the peracetic acid precursor is added before the formation of the peroxide species (column 8, lines 54-55). Therefore, the peroxide species would be formed by the voltage sent to the

cathode and anode and simultaneously react with the peracetic acid precursor to form the peracetic acid solution, and wherein the peracetic acid solution is formed inside the cathode chamber and supplied directly from the chamber to a decontamination system via a fluid line (89) as disclosed in column 11, lines 56-59. Thus, a voltage is applied across the anode and the cathode to electrolytically synthesize a peracetic acid-containing aqueous solution.

Merk does not appear to disclose that the component utilized with the oxygen containing gas in the process is acetic acid and/or acetate. However, it is conventionally known in the art of electrolytic synthesis to use acetic acid and/or acetate to produce peracetic acid. Tennakoon discloses one example of this teaching in a method for the electrolytic synthesis of peracetic acid which comprises electrolytically synthesizing peracetic acid from the acetic acid and/or acetate and an oxygen containing gas as starting materials in the presence of a solid acid catalyst in column 12, lines 19-47. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Merk to utilize acetic acid or acetate to produce peracetic acid, as such is a conventionally known and commonly used chemical in the electrolytic synthesis of peracetic acid as exemplified by Tennakoon.

Merk also does not appear to disclose the limitations of a particulate solid acid catalyst comprising a polymer resin arranged between the gas cathode and the membrane. Tennakoon discloses a method for the electrolytic synthesis of peracetic acid which comprises electrolytically synthesizing peracetic acid from the acetic acid and/or acetate and an oxygen containing gas as starting materials

in the presence of a solid acid catalyst in column 12, lines 19-47. Tennakoon continues to disclose that the solid acid catalyst (132) is comprised of a polymer resin (column 4, lines 42-47), and is located between a gas cathode (130) and a membrane (120) as disclosed in Figure 1 and column 10, lines 45-55. As shown in Figure 1, the cathode (130) is comprised of a gas diffusion layer and the solid acid catalyst layer (132) that is between the diffusion layer (134) and the membrane (120). Since the catalyst layer is located between the membrane and at least a portion of the cathode, then it is located between the two objects. Tennakoon also discloses that the solid acid catalyst is provided in the

Response to Arguments

4. Applicant's arguments with respect to Merk et al. (U.S. Patent No. 6,387,238) have been considered but are moot in view of the new ground(s) of rejection.

5. Applicant's arguments filed September 28, 2007 with respect to Tennakoon et al. (U.S. Patent No. 6,949,178) have been fully considered but they are not persuasive.

Applicant's principle argument is:

(a) Tennakoon et al fails to disclose a particulate solid acid catalyst arranged between the gas cathode and the membrane as required by the present claims.

As disclosed above with respect to claims 1 and 5, Tennakoon discloses a particulate solid acid catalyst (132) arranged between a cathode (130) and a membrane (120) as shown in Figure 1, and disclosed in *column 10, lines 45-55.*

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin C. Joyner whose telephone number is (571) 272-2709. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gladys Corcoran can be reached on (571) 272-1214. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

GLADYS JP CORCORAN
SUPERVISORY PATENT EXAMINER

KCJ